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**METHOD AND DEVICE FOR DECIDING BASE SEQUENCE OF DNA
USING DIRECTIONAL ORIENTATION OF DNA**

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Abstract

PURPOSE: To decide all base sequences of a plurality of long DNAs by arranging the DNAs, with the DNAs being oriented in a fixed direction from the upstream side to the downstream side (or from the downstream side to the upstream side) of genes, and successively cutting the DNAs into pieces from their ends by using a laser beam, etc., and then, deciding the base sequence of each piece.

CONSTITUTION: In order to realize the title directional orientation, a DNA is first elongated by using an electric field and one end of the DNA is fixed to the end of an electrode 2. When the DNA is then cut off at a part near its end by using a restriction enzyme, only such a cut piece that has a fixed directional property can remain on the electrode 2. Therefore, when the DNA having directional orientation thus obtained is successively cut into pieces from its end with a laser beam and the sequence of the cut pieces is decided by a prior art method, the base sequence of the original long DNA can be found by connecting the sequences of the cut piece. Since the base sequence of the DNA can be successively decided when this method is used, the time and labor of the conventional method required for estimating total sequence from the sequences of randomly cut pieces are not required.

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